

a remarkably clean extirpation of the tumor, with a correspondingly good prognosis.

It has been proposed to group all the pigment bearing tumors whether sarcomas or epitheliomas into one class called the melanomata. Such a course has very little in its favor. The classification of tumors according to the fundamental tissue of which they are composed is more in accord with their natural history and tends to keep our ideas of them clear and sharp cut. Furthermore, although the formation of melanin is so strikingly a feature clinically, yet on narrowly examining such tumors it will be seen to be wholly subsidiary. In this tumor, for instance, and it is a good example of its class, only a very few of its cells are associated with the formation of melanin. Almost all the cells are colorless, having no coloring matter either in or around them. The metastatic growths, also, from such neoplasms are sometimes entirely white, and sometimes entirely black, and sometimes particolored, white and black. In the same organ one can find all three kinds of metastatic tumors, white, black and particolored. The fact is that the pigment in these cases is formed in the connective tissue cells that are called chromatophores. Chromatophores are connective tissue cells that lie just below the epithelial layers of the skin or retina, and have the property of elaborating black or brown pigment. They send out long processes from their cell body along which the pigment is carried. These pigment bearing processes then extend up between the basal epithelial cells, depositing the pigment in and between them.

The chromatophores in the skin lie well up in the upper layers of the corium and in the papillary layer, where they can most readily supply pigment to the epidermis. In accordance with this, we see in this tumor, most of the black cells in this situation, but in far greater abundance than normal. Curiously enough, however, although a superabundance of pigment is found in the tumor itself, no pigment is present in or between the epithelial cells lying over the tumor, where we would expect to see it in the natural course of its evolution. This absence of pigment in the epidermis may be due to the foot being covered, and as the stimulus of light is absent, no pigment is attracted into the epithelial cells; or it may be that although pigment is formed in abundance, it is not physiologically perfect, and therefore not fitted to finding its way to the epithelial cells. This last would be perfectly in accord with what we know of tumor cells; they divide and multiply with great rapidity, but physiologically they are incapable of performing their appointed work.

It is therefore found that in this tumor as in most melanotic sarcomas, the neoplasm springs from an organ in which chromatophores are normally present, and that these chromatophores participate in the growth of the tumor giving it a peculiarly striking appearance, but not really constituting the majority of its cells. As therefore the tumor is not formed either wholly or for the most part of chromatophores it is inexpedient to give it a name, such as melanoma or chromatophorma, that indicates that it is wholly or preponderately composed of chromatophores.

Dr. H. M. Sherman's remarks: In removing the tumor which Doctor Montgomery has described, the question arose as to how wide a removal of tissue was necessary—a priori the patient's expectation of non-recurrence or of no metastases would be the greater the more of the possibly implicated tissues were removed. Of course the whole toe should be removed, but should the foot be sacrificed? If this be answered in the affirmative, would one not have to decide the same as regards the leg or the thigh? Really an amputation planned to be at a higher

point than the most traveled migrating cell, **must** be at the highest point at which an amputation can be done. As a hip joint amputation could not offer absolute immunity from secondary tumors the subject was never broached, nor was anything ever said about thigh, leg or foot amputations and for the same reasons. The toe was taken off and with it its metatarsal bone and a long narrow wedge of integument and soft tissues on the dorsal and plantar aspects. This was as far as I decided to go.

The removal of regional glands was considered and decided against. The regional glands in this instance were in the groin. If they were implicated, so must be all the tissues between the toe and the groin, and the removal of the glands would be unnecessary or useless. If they were not implicated there could be no point in removing them. I felt for them carefully and also examined the pelvis contents while the patient was anesthetized, but could detect no sign of glandular enlargement.

## SAN FRANCISCO POLYCLINIC GATHERING.

Regular Meeting, June 9th, 1909.

### A Case of Hodgkin's Disease.

By Dr. E. Schmoll, San Francisco.

The patient's age is 29. She entered the clinic two months ago with the following history: She had been a waitress in dance halls and had been drinking heavily. She denies any specific or gonococcus infection. About a year ago she had an attack of delirium tremens and when she came out of the attack she noticed that above the clavicle she had a gland that was enlarged. This is the place where the first glands are usually seen. This gland increased very rapidly in size and at the same time she began to feel the glands in her axilla. The principal growth has been on the neck and the glands have reached a tremendous size. When admitted to the hospital she was in very bad shape. She had involvement of the mediastinum. There was edema of the hands, more on the left side than on the right and she had considerable difficulty in breathing. She had stridor with respiration, the respiration increasing to 30 and 35. Physical examination found all the glands of the body swollen, principally those which you see at present and the glands under the axilla and the inguinal glands. The spleen was enlarged sufficiently so as to be just palpable. The blood examination showed rather strange conditions. There was not very much anaemia, the hemoglobin was 85 at the time of the blood count, there was a leucocytosis of 18,800 and a differential count which is different from the usual counts. In the majority of these cases we have a leukopenia between 4000 and 6000 with a relative lymphocytosis. In this case we had a leucocytosis amounting to 89% polynuclears and mononuclears amounting only to 10%. These cases belong to the type of lymphosarcoma, the malignant form of Hodgkin's disease where the capsule of the gland has been broken through. The glands in the neck are adherent as well to the skin as to the underlying tissues and the glands can be palpated singly or found in the form of large packages. The patient improved at the beginning under treatment of injections of atoxyl and the mediastinal pressure evidently retroceded, the anaemia disappeared, the dyspnoea decreased and there was no further increase in the size of the glands. X-ray treatment was taken up but was not continued because of the difficulty in getting the patient to the place of X-ray treatment. The symptoms have increased, the pressure on the trachea has increased and the patient has been very miserable. Doctor Gibbons has written an extensive article, a valuable contribution to

our knowledge of this subject, and he has consented to demonstrate some slides this evening and to say a few words on the pathology of Hodgkin's disease.

#### DISCUSSION.

Doctor H. W. Gibbons, San Francisco: This case is most interesting to me particularly from the point of view of classification. Clinically the tumor of the neck presents some aspects of malignancy, that is: the apparent solidity of the mass and involvement of adjacent structures. Also histologically there are aspects of malignancy. Therefore is Hodgkin's disease malignant in its nature? Recd in 1903 in an extensive study of seven cases came to the conclusion that Hodgkin's disease is an inflammatory process producing lesions analagous to the granulomata. His work was seconded by Longcope and Simmons. In a pathological study of nine cases which I made about this time the conclusion was reached that Hodgkin's disease should be classed with malignant tumors. W. B. Coley from his clinical studies supports this view. Adami in his textbook admits of no grounds for classing this disease with tumors, and Longcope in his article in Osler's system adheres to the view that the disease is of an inflammatory nature. We have in Hodgkin's disease an affection principally of the lymph glands which may involve in other organs. The glands first show a proliferation of the lymph cells at the centers of the follicles. The anatomical structure of the gland is early lost and the resulting picture is one of a mass of large lymphocytes of the character of those found at the germinal centers. At the same time there is a proliferation of the endothelial cells which line the lymph follicles which lie along the trabecular and under the capsule. These endothelial cells produce large cells of epithelial character which may leave from one to ten or more nuclei. These constitute the giant cells first described by Virchow, and which Reid determined to be characteristic of Hodgkin's disease. She traced their development from the endothelial cells lining the sinuses. This picture constitutes the soft variety of Hodgkin's disease. The hard variety shows a picture quite different although it is only a stage of the same process produced principally by the development of fibrous tissue at the expense of the cellular elements. Sections prepared from a cervical gland removed from this case show a typical picture of Hodgkin's disease of the hard variety. The structure of the gland is entire destroyed, there is a marked proliferation of the endothelial cells with the formation of the characteristic giant cells, there are many eosinophiles and there is a marked increase in the connective tissue of the capsule, trabecular and reticular. In places the thickened capsule shows invasion with tissue of the same appearance as that of the interior of the gland. The lymphocytes are scarce. Mitotic figures may be seen in the endothelial cells, in the giant cells and connective tissue cells but none in the lymphocytes. No author to my knowledge has found them in the lymphocytes so that the process seems to be confined to the fixed tissue cells and not in the wandering cells as one would expect in an inflammatory condition. On the whole the histological picture at least is very suggestive of malignancy and I think in time it will be shown that Hodgkin's disease is related to the sarcomas perhaps through that little understood group of tumors, the endothelioma. Doctor Brunn has asked whether I find different types or different pictures from different parts of the same tumor or whether one is likely to find the

same histological picture right through in different pieces from different parts. This is an important question. In an inflammatory disease advancing by progressively affecting different glands or organs, one would expect to find in the older lesions a fibrous type and in the newer lesions a more cellular type. Most authors describe this progression and believe the lesions in the internal organs to be growths arising from lymphoid tissue, previously existing in these organs, and not in the nature of true metastases. Ribert, however, believes them to be metastases caused by growth or transmission along the lymph channel. In the cases I have studied, the uniformity of the lesions from different parts of the body in the same case, was quite striking. A lymph gland will show a certain type and the metastases in the liver, spleen, lung will show the same type even in the small, apparently young, nodules. This is much the same in the glands from different parts of the body, and even the small glands at the periphery of mass of enlarged glands presents at a very early stage of its involvement a picture of similar type to that of the mass itself. As far as one tumor mass is concerned, one finds areas which are more cellular and areas where there is a great predominance of connective tissue but a general type prevails so that there is more difference than one sees in various parts of certain sarcoma.

#### Bullet Wound of Head.

Doctor Barrett, San Francisco: We had hoped to have had radiographs of this case to show you the error that can be made in the diagnosis. This patient is 35 years old, family history negative, about 3½ weeks ago had been attending some of the dance halls and while intoxicated was robbed of all his money and clothing. He became despondent and shot himself with a revolver. He brought it, he says, pretty close to his temple with the muzzle directed well forward. This must have been true for he was not at any time unconscious and was able to walk half a block, although he was bleeding considerably. Because of the loss of blood, slight pain, and his hysterical condition he cried out for help and the officers who found him sent an ambulance for him. He was taken to the Emergency Hospital and the wound probed; he was examined carefully, the history taken and two sutures put in the wound of entrance with a small drain. There was no wound of exit. He was then sent to one of the hospitals in the city where three radiographs were taken, and it was decided from the radiographs that the bullet was somewhere in the frontal lobe. The patient had experienced no pain except on the second day when there was a feeling as of a hard lump on the forehead and some tenderness upon pressure over it. There was a large hematoma extending well up on the scalp, in the center of which examination showed a harder area which was thought to be bone. After being in the hospital for some time and showing no symptoms except an alleged loss of vision in the right eye and discharge from the right ear the patient was transferred to the City and County Hospital. Doctor Callnow, our interne, made an incision under local anesthesia and extracted the bullet from the frontal bone where it was imbedded. It is presumed from the history which we read at the hospital where he had been that the presence of the hematoma or the focus being incorrect caused the error in the diagnosis because it certainly looked as if the bullet was behind the bone. The patient says his vision is worse in the morning and improves in the afternoon. We were unable to determine any definite disturbance of vision. The bullet had been thought by two or three who examined him to be a piece of bone rather than the bullet itself and even when cut down upon it was so flattened as to resemble bone.